

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
06 August 2020 (06.08.2020)



(10) International Publication Number
WO 2020/159912 A1

(51) International Patent Classification:

A61M 11/00 (2006.01) A61M 16/00 (2006.01)
A61M 11/02 (2006.01) A61M 16/01 (2006.01)
A61M 15/00 (2006.01)

(21) International Application Number:

PCT/US2020/015301

(22) International Filing Date:

28 January 2020 (28.01.2020)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

16/263,749 31 January 2019 (31.01.2019) US

(71) Applicant: **TEXAS TECH UNIVERSITY SYSTEM**
[US/US]; Office of Research Commercialization, P.O. Box
42007, Lubbock, TX 79409-2007 (US).

(72) Inventor: **FUHRMAN, Bradley P.**; 6361 La Posta Drive,
El Paso, TX 79922 (US).

(74) Agent: **CHALKER, Daniel J.** et al.; Chalker Flores, LLP,
14951 North Dallas Parkway, Suite 400, Dallas, TX 75254
(US).

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ,

CA, CH, CL, CN, CO, CR, CU, CZ, DE, DJ, DK, DM, DO,
DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN,
HR, HU, ID, IL, IN, IR, IS, JO, JP, KE, KG, KH, KN, KP,
KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME,
MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ,
OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA,
SC, SD, SE, SG, SK, SL, ST, SV, SY, TH, TJ, TM, TN, TR,
TT, TZ, UA, UG, US, UZ, VC, VN, WS, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ,
UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ,
TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK,
EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV,
MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM,
TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW,
KM, ML, MR, NE, SN, TD, TG).

Published:

— with international search report (Art. 21(3))

(54) Title: DEVICE AND METHOD TO COMPENSATE FOR AIR LEAK FROM AN ANESTHESIA CIRCLE CIRCUIT

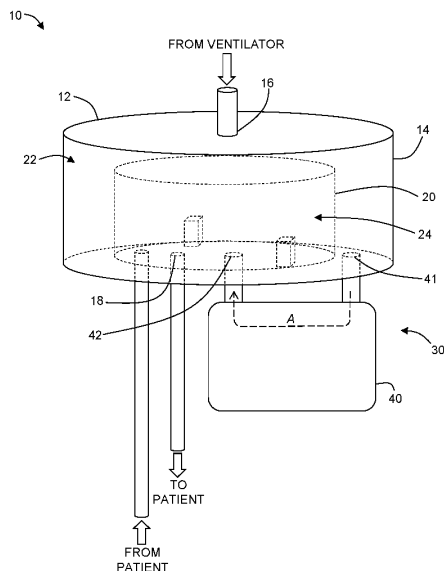


Fig. 1

(57) Abstract: The disclosure provides a way to supplement the tidal volume delivered to the patient by a leaking re-breather when the delivered volume becomes less than that set by the ventilator (in either pressure-regulated or volume modes). This may be accomplished with a shunt — a gas conduit joining the non-patient side of the re-breather to the patient side. A low-resistance, plenum or a draw-over vaporizer may also be incorporated into the gas pathway. Such a device may include a housing with a movable partition separating an actuating side from a patient side. The housing includes a ventilator orifice for pneumatic communication between a ventilator and the actuating side and a patient orifice for pneumatic communication between the patient side and a patient. A shunt defines a bypass flow path from the actuating side and to the patient side when the movable partition is at a maximal displacement towards the patient side.

WO 2020/159912 A1